

# COURSE SYLLABUS



COURSE TITLE: Math 039 Basic Math for Healthcare

CLASS SECTION: Math S03

TERM: Winter 2023

COURSE CREDITS: 0

DELIVERY METHOD(S): Lecture

Camosun College campuses are located on the traditional territories of the Ləkʷəŋən and W̱SÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here.

Learn more about Camosun's [Territorial Acknowledgement](#).

The COVID-19 pandemic has presented many challenges, and Camosun College is committed to helping you safely complete your education. Following guidelines from the Provincial Health Officer, WorkSafe BC, and the B.C. Government to ensure the health and wellbeing of students and employees, Camosun College is providing you with every possible protection to keep you safe. Our measures include COVID Training for students and employees, health checks, infection control protocols including sanitization of spaces, PPE and ensuring physical distancing. For details on these precautions please follow this link: <http://camosun.ca/covid19/faq/covid-faqs-students.html>. However, if you're at all uncomfortable being on campus, please share your concerns with your Instructor. If needed, alternatives will be discussed.

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*Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable explanation in advance, you will be removed from the course and the space offered to the next waitlisted student.*

## INSTRUCTOR DETAILS

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NAME: Augustin (Ruse) Rusekampunzi

EMAIL: [ruse@camosun.ca](mailto:ruse@camosun.ca)

OFFICE: CBA 148

HOURS: Tuesday, Thursday and Friday 1030 – 1220. (See class handout for lab and office hours).

## CALENDAR DESCRIPTION

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In this course, students learn topics in Adult Basic Education (ABE) Fundamental Mathematics such as whole numbers, decimals, fractions, proportions, percents, conversions and dosage calculations. These topics are needed for professional math competence in many health professions and for further study in Intermediate Mathematics. Students will focus on strengthening comprehension by solving real practice problems from occupational examples.

### Prerequisites

One of:

- COM in [ENGL 025](#)
- COM in [ELD 052](#) and [ELD 054](#)

## COURSE LEARNING OUTCOMES / OBJECTIVES

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At the end of the course, students will be able to:

1. Demonstrate knowledge and skills in using the principles and operations of various math topics such as arithmetic, measurement, graphs, formulas, and geometry
2. Apply a variety of strategies in solving math-related problems
3. Apply knowledge and skills in various math topics to solve problems related to Health Care
4. Use knowledge of various math topics as a basis for further study.

## REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

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- (a) textbook: *Math Basics for the Healthcare Professional*, 4<sup>th</sup> Ed, by Michele Benjamin-Lesmeister
- (b) calculator (scientific calculator recommended: [Sharp EL531W](#) used for MATH 053)

### Supplementary Materials

- (a) Selected open source math videos: <https://sites.camosun.ca/acf-math/wp-content/uploads/sites/6/2020/06/MATH-039-Video-Links-June-2020.pdf>
- (b) website <https://mlm.pearson.com/northamerica/mymathlab/> (online text, tutorials, videos, and testing)

## COURSE SCHEDULE, TOPICS, AND ASSOCIATED PREPARATION / ACTIVITY / EVALUATION

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### Self-paced Instructions

For each unit of your Math 039 text listed in the table below,

- a. **Skip the Pre-Test** at the beginning of the text, as well as at the beginning of each Unit/Chapter
- b. **Read the Student Learning Outcomes, the Overview, and Review** sections for each math topic and study the **Examples**
- c. **Do the odd numbered questions only** (#1, 3, 5, etc.) in each of the **Practices**
- d. **Check** your answers in the back of the book (**Appendix C**); you can also record them in the “Score” column of your Course Outline below, if you wish
- e. (Optional) For **additional review**, if needed, do:
  - o post-tests and a pre-tests (answers at the back of the book)
  - o a unit review at the end of the chapter
  - o practice tests for all 13 units (Appendix B)
- f. Ask for each **Module Test** when ready

| MATH 039 course content                                  | Score |
|--|-------|
| Text: <i>Math Basics for the Healthcare Professional</i> |       |

|             |  |  |
|-------------|--|--|
| MODULE 1    | ARITHMETIC OPERATIONS (no calculator)                                    |  |
|             |  |  |
| Page        | Unit 1 – Whole Number Review   |  |
| 6           | Addition   |  |
| 8           | Subtraction  |  |
| 9           | Multiplication   |  |
| 11          | Prime Factorization  |  |
| 12          | Division: <i>Practice</i>  |  |
| 15          | Solving for the Unknown Number   |  |
| 16          | Rounding   |  |
| 17          | Estimation   |  |
| 18          | Statistical Analysis   |  |
| 25          | Roman Numerals   |  |
| 26          | Time in Allied Health  |  |
|             |  |  |
| <b>Page</b> | <i>Unit 2 – Fractions</i>  |  |
| 33          | Part-to-whole Relationships  |  |
| 34          | Equivalent fractions   |  |
| 35          | Reducing to Lowest or Simplest Terms                                     |  |
| 38          | Improper Fractions   |  |
| 39          | Adding Fractions with Like Denominators                                  |  |
| 41          | Finding the Common Denominator   |  |
| 43          | Difficult Common Denominators  |  |
| 46          | Ordering Fractions   |  |
| 46          | Subtraction of Fractions   |  |
| 51          | Multiplication of Fractions  |  |
| 55          | Multiplication of Mixed Numbers  |  |
| 58          | Division of Fractions  |  |
| 61          | Converting Temperatures Using Fraction Formulas                          |  |
| 63          | Complex Fractions  |  |
| 66          | Measurement in Fractions   |  |
|             |  |  |
| <b>Page</b> | <i>Unit 3 – Decimals</i>   |  |
| 75          | Decimals   |  |
| 78          | Rounding Decimals  |  |
| 79          | Comparing Decimals   |  |
| 82          | Addition of Decimals   |  |
| 83          | Subtraction of Decimals  |  |
| 84          | Multiplication of Decimals   |  |
| 87          | Division of Decimals   |  |
| 89          | Simplified Multiplication and Division of Decimals                       |  |
| 92          | Changing Decimals to Fractions   |  |
|             |  |  |
| 94          | Changing Fractions to Decimals   |  |
| 96          | Temperature Conversions with Decimals                                    |  |
| 97          | Solving Mixed Fraction and Decimal Problems                              |  |
|             |  |  |
| <b>TEST</b> | <b>Module 1 Test - Arithmetic Operations (Units 1-3) (no calculator)</b> |  |
|             | (75% minimum)  |  |
|             |  |  |
|             |  |  |
|             |  |  |
|             |  |  |

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|---------------------|---|--|
| <b>MODULE<br/>2</b> | <b><i>RATIO, PERCENT &amp; MEASUREMENT (calculator allowed)</i></b> |  |
|                     |   |  |
| <b>Page</b>         | <b><i>Unit 4 – Ratio &amp; Proportion</i></b>                       |  |
| 105                 | Ratio   |  |
| 109                 | Proportion  |  |
| 110                 | Solving for “x”   |  |
| 115                 | Word Problems Using Proportions                                     |  |
| 117                 | Solving for “x” in More Complex Problems                            |  |
| 119                 | Nutritional Application of Proportions                              |  |
| 120                 | Practice with Food Labels   |  |
|                     |   |  |
| <b>Page</b>         | <b><i>Unit 5 – Percent</i></b>                                      |  |
| 129                 | Percent-to-Decimal Conversion                                       |  |
| 130                 | Decimal-to-Percent Conversion                                       |  |
| 131                 | Using Proportion to Solve Percent Problems                          |  |
| 136                 | Percent Change  |  |
| 137                 | Percent Strength of Solutions                                       |  |
| 141                 | Single Trade Discount   |  |

|                     |  |  |
|---------------------|--|--|
| <b>Page</b>         | <b><i>Unit 6 – Combined Applications</i></b>   |  |
| 148                 | Conversions Among Fractions, Decimals, Ratios & Percent                                |  |
| 152                 | Using Combined Applications in Measurement Conversion                                  |  |
| 153                 | Standard Units of Measure  |  |
|                     |  |  |
| <b>Page</b>         | <b><i>Unit 8 – The Metric System</i></b>   |  |
| 188                 | Using the Metric Symbols   |  |
| 190                 | Changing Unit Measures   |  |
|                     |  |  |
| <b>TEST</b>         | <b><i>Module 2 Test – Ratio, Percent &amp; Measurement (Units 4, 5, 6 &amp; 8)</i></b> |  |
|                     | (75% minimum)  |  |
|                     |  |  |
| <b>MODULE<br/>3</b> | <b><i>DRUG LABELS, CONVERSIONS AND DOSAGE</i></b>                                      |  |
|                     |  |  |
| <b>Page</b>         | <b><i>Unit 9 - Reading Drug Labels, Medicine Cups, Syringes &amp; IV Bags</i></b>      |  |
| 204                 | Drug Labels  |  |
| 209                 | Medicine Cups  |  |
| 210                 | Syringes   |  |
| 211                 | IV Bags  |  |
|                     |  |  |
| <b>Page</b>         | <b><i>Unit 10 - Apothecary Measurement &amp; Conversion</i></b>                        |  |
| 219                 | Apothecary Measurement & Conversions   |  |
| 229                 | Rounding in Dosage Calculations  |  |
|                     |  |  |
| <b>Page</b>         | <b><i>Unit 11 - Dosage Calculations</i></b>  |  |
| 237                 | Performing Dosage Calculations   |  |
|                     |  |  |
| <b>TEST</b>         | <b><i>Module 3 Test – Drug Labels, Conversions &amp; Dosage (Units 9-11)</i></b>       |  |
|                     | (75% minimum)  |  |
|                     |  |  |

|                 |   |  |
|-----------------|---|--|
|                 |   |  |
| <b>MODULE 4</b> | <b>TYPES OF DOSAGE CALCULATIONS</b>   |  |
|                 |   |  |
| <b>Page</b>     | <b>Unit 12 - Parenteral Dosage</b>  |  |
| 255             | Injections  |  |
|                 |   |  |
| <b>Page</b>     | <b>Unit 13 – Basics of Intravenous Fluid Administration</b>                   |  |
| 270             | Calculating IV Infusion Rates   |  |
| 273             | Modified Setup  |  |
| 275             | Infusion Duration   |  |
| 277             | Calculating Total Volume  |  |
|                 |   |  |
| <b>Page</b>     | <b>Unit 14 – Basic Dosage by Body Weight</b>                                  |  |
| 284             | Conversion to Kilograms   |  |
| 286             | Calculating Dosage  |  |
|                 |   |  |
| <b>TEST</b>     | <i>Module 4 – Types of Dosage Calculations (Units 12-14)</i><br>(75% minimum) |  |
|                 |   |  |
| <b>Review</b>   | Math 039 Review: <i>Comprehensive Post-test (Appendix A on P. 293)</i>        |  |
| <b>FINAL</b>    | <b>Final Exam</b>   |  |
|                 |   |  |

Students registered with the Centre for Accessible Learning (CAL) who complete quizzes, tests, and exams with academic accommodations have booking procedures and deadlines with CAL where advanced notice is required. Deadlines can be reviewed on the [CAL exams page](http://camosun.ca/services/accessible-learning/exams.html). <http://camosun.ca/services/accessible-learning/exams.html>

#### EVALUATION OF LEARNING

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- (a) **Tests** 75% of the course grade is based on the average of **all** test scores for modules 1–4 (including both passing and failing test scores)
- (b) **Exams** 25% of the course grade is based on the average of **all** final exam scores (including both passing and failing exam scores)

**Note:** Students with a record of poor attendance OR poor progress may be restricted from re-registering in Academic and Career Foundations Department courses.

| DESCRIPTION | WEIGHTING    |
|-------------|--------------|
| Module 1    | 18.75%       |
| Module 2    | 18.75%       |
| Module 3    | 18.75%       |
| Module 4    | 18.75%       |
| Final Exam  | 25%          |
|             |              |
|             | <b>TOTAL</b> |
|             | 100%         |

If you have a concern about a grade you have received for an evaluation, please come and see me as soon as possible. Refer to the [Grade Review and Appeals](http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf) policy for more information.  
<http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf>

## COURSE GUIDELINES & EXPECTATIONS

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The course consists of 6 hours of class time and 4 hours of lab time per week. Lab time is generally spent in the Help Centre where instructional resources are available. Course completion time will vary for each student, depending on a number of factors, including your current level of math skills, motivation, learning rate, and how much time you have to study math, either at the college or at home. Students generally need to spend 5–15 hours of study time per week to complete each math course within a reasonable amount of time.

## SCHOOL OR DEPARTMENTAL INFORMATION

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**Grading System** – Standard Grading System <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>

|    |         |    |        |    |             |   |        |
|----|---------|----|--------|----|-------------|---|--------|
| A+ | 90–100% | B+ | 77–79% | C+ | 65–69%      | D | 50-59% |
| A  | 85–89%  | B  | 73–76% | C  | 60–64%      | F | 40-49% |
| A– | 80–84%  | B– | 70–72% | IP | in progress |   |        |

### Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for information on conversion to final grades, and for additional information on student record and transcript notations.

## STUDENT RESPONSIBILITY

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Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

## SUPPORTS AND SERVICES FOR STUDENTS

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Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit <http://camosun.ca/students/>.

| Support Service                     | Website   |
|-------------------------------------|---|
| Academic Advising                   | <a href="http://camosun.ca/advising">http://camosun.ca/advising</a>                       |
| Accessible Learning                 | <a href="http://camosun.ca/accessible-learning">http://camosun.ca/accessible-learning</a> |
| Counselling                         | <a href="http://camosun.ca/counselling">http://camosun.ca/counselling</a>                 |
| Career Services                     | <a href="http://camosun.ca/coop">http://camosun.ca/coop</a>                               |
| Financial Aid and Awards            | <a href="http://camosun.ca/financialaid">http://camosun.ca/financialaid</a>               |
| Help Centres (Math/English/Science) | <a href="http://camosun.ca/help-centres">http://camosun.ca/help-centres</a>               |
| Indigenous Student Support          | <a href="http://camosun.ca/indigenous">http://camosun.ca/indigenous</a>                   |
| International Student Support       | <a href="http://camosun.ca/international/">http://camosun.ca/international/</a>           |
| Learning Skills                     | <a href="http://camosun.ca/learningskills">http://camosun.ca/learningskills</a>           |
| Library                             | <a href="http://camosun.ca/services/library/">http://camosun.ca/services/library/</a>     |
| Office of Student Support           | <a href="http://camosun.ca/oss">http://camosun.ca/oss</a>                                 |
| Ombudsperson                        | <a href="http://camosun.ca/ombuds">http://camosun.ca/ombuds</a>                           |
| Registration                        | <a href="http://camosun.ca/registration">http://camosun.ca/registration</a>               |
| Technology Support                  | <a href="http://camosun.ca/its">http://camosun.ca/its</a>                                 |
| Writing Centre                      | <a href="http://camosun.ca/writing-centre">http://camosun.ca/writing-centre</a>           |

If you have a mental health concern, please contact Counselling to arrange an appointment as soon as possible. Counselling sessions are available at both campuses during business hours. If you need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

## COLLEGE-WIDE POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

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### Academic Accommodations for Students with Disabilities

The College is committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, depression, learning, etc). If you have a disability, the [Centre for Accessible Learning](#) (CAL) can help you document your needs, and where disability-related barriers to access in your courses exist, create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate academic accommodations you need without disclosing your diagnosis or condition to course instructors. Please visit the CAL website for contacts and to learn how to get started:

<http://camosun.ca/services/accessible-learning/>

### Academic Integrity

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.pdf> for policy regarding academic expectations and details for addressing and resolving matters of academic misconduct.

### Academic Progress

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

### Course Withdrawals Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <http://camosun.ca/learn/fees/#deadlines>.

### Grading Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for further details about grading.

### Grade Review and Appeals

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

### Mandatory Attendance for First Class Meeting of Each Course

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable reason in advance, you will be removed from the course and the space offered to the next waitlisted student. For more information, please see the "Attendance" section under "Registration Policies and Procedures"

(<http://camosun.ca/learn/calendar/current/procedures.html>) and the Grading Policy at <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>.

### Medical / Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.



### Sexual Violence and Misconduct

Camosun is committed to creating a campus culture of safety, respect, and consent. Camosun's Office of Student Support is responsible for offering support to students impacted by sexual violence. Regardless of when or where the sexual violence or misconduct occurred, students can access support at Camosun. The Office of Student Support will make sure students have a safe and private place to talk and will help them understand what supports are available and their options for next steps. The Office of Student Support respects a student's right to choose what is right for them. For more information see Camosun's Sexualized Violence and Misconduct Policy: <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.9.pdf> and [camosun.ca/sexual-violence](http://camosun.ca/sexual-violence). To contact the Office of Student Support: [oss@camosun.ca](mailto:oss@camosun.ca) or by phone: 250-370-3046 or 250-3703841

### Student Misconduct (Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College's Student Misconduct Policy at <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf> to understand the College's expectations of academic integrity and student behavioural conduct.

**Changes to this Syllabus:** Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.